

Technical Data

MEASURING PRINCIPLES

COD UV: SAC at 254nm turbidity correction at 550nm as per DIN 348404-3; COD correlation against known calibrant
BOD FLUO: Fluorimetric measurement (tryptophan like) excitation at 280nm, emission at 360nm; BOD correlation by Tryptophan calibrant to be adjusted and/or performed on site
Turbidity: measurement at 850nm as per ISO 7027, option: correlation with TSS to be performed on site
Nitrate UV: direct reading at 220 nm, correction at 275 nm
Colorimetric methods: as per method description

STANDARD RANGES:

Ammonia: 0-0.3/0.5/1.0/2.0/5.0/10.0 mg/L N-NH₃
Nitrate+Nitrite Colorimetric: 0.3/0.5/1.0/2.0/5.0/10.0 mg/L N-NO_x
Nitrate UV: 0-10/120/30/50 mg/L N-NO₃
Nitrite: 0-0.05/0.1/0.2/0.3/0.5/1.0 mg/L N-NO₂
Phosphate: 0-0.3/0.5/1.0/2.0/5.0 mg/L P-PO₄
TN Colorimetric: 0-2.0/5.0/10.0/20.0 mg/L N
TN UV: 0-10/20/30/50 mg/L N
TP: 0-1.0/2.0/5.0/10.0 mg/L P
COD: 0-50/100/200/1000/2000/3000 mg/L
BOD: 0-20/50/100/500 mg/L
Turbidity: 0-20/50/100/500/1000 NTU

MEASUREMENT TYPE

Batch, MP version batch and sequential

MEASURING FREQUENCY

Single measurement, MP4 measurement or continuous programmable

MEASURING TIME

MP4 Nutrients: < 60 minutes, for the complete set of 4 methods (depending on the ranges)
TN & TP: 40/60 minutes depending on ranges
COD: 7-10 min / BOD: 7-10 min / Turbidity: 7-10 min; depending on range and sample temperature, for combined versions 10-15 min

COMMUNICATIONS PORT:

USB

ALARM MESSAGES:

On 8" color touch screen and on results buffer

REAGENTS:

Reagent kit available on request

ENVIRONMENTAL TEMP.

10-35 °C

STANDARD PROTECTION:

IP 65 with closed case

HARDWARE:

PC104 standard microcontroller, integrated 8" colour touch screen

POWER SUPPLY:

12 Vcc; external power supply from 110/220 Vac to 12 Vcc included in the scope of delivery

ABSORPTION:

4W stand by, 10 W analysis

WEIGHT:

7.7 Kg without reagents

DIMENSION:

180x460x360 mm (H x W x D)

Subject to change without notice



µMAC SMART

PORTABLE
WATER ANALYZER
FAST AND ACCURATE
ON SITE ANALYSIS



SYSTEAL SpA

Facilities: Via Paduni, 2/A - 03012 ANAGNI (FR)
Tel. (+39) 0775.776058 - Fax (+39) 0775.772204
e mail: info@systea.it Web site: <http://www.systea.it>

µMAC SMART Applications

More than 50 different applications are available on the µMAC SMART; the most important are: Ammonia, Phosphate, Nitrate+Nitrite, Nitrite, Silicates, Total Nitrogen, Total Phosphorous, COD (UV), BOD, Turbidity

µMAC SMART can be delivered as single method analyzer or multiple methods (MP versions) where the analyzer run in sequence up to 4 measurements on the same sample

µMAC SMART STANDARD VERSIONS

µMAC SMART MP4 Nutrients:

Ammonia: fluorimetric by OPA

Phosphate: colorimetric by Molybdate - Ascorbic acid

Nitrate+Nitrite: colorimetric by Vanadium Chloride reduction to NO₂ followed by NED + SAA

Nitrite: Colorimetric NED + SAA

µMAC SMART TN: Total Nitrogen: UV oxidation to NO₃ and direct reading at 220 nm

µMAC SMART TP: Total Phosphorous: acidic hydrolysis & UV oxidation, orthophosphates measurement by Molybdate - Ascorbic acid

µMAC SMART MP2 TN/TP:

Total Nitrogen: UV oxidation, colorimetric by photoreduction to NO₂ followed by NED + SAA

Total Phosphorous: acidic hydrolysis & UV oxidation, orthophosphates measurement by Molybdate - Ascorbic acid

µMAC SMART MP2 TN/NO₃:

Total Nitrogen: UV oxidation to NO₃ direct reading at 220nm

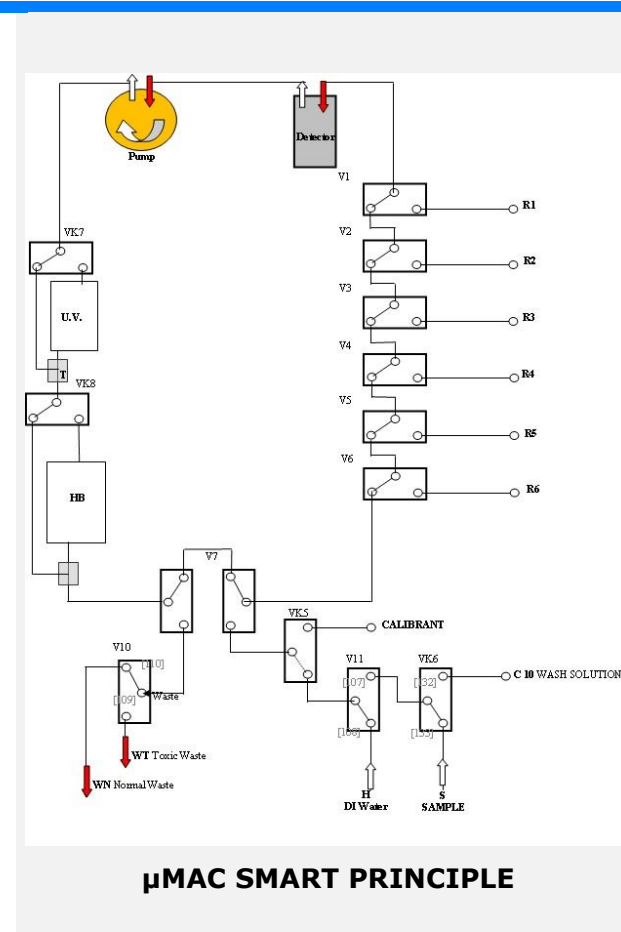
Nitrate: direct reading at 220 nm

µMAC SMART MP3 TP/PO₄/NH₃:

Total Phosphorous: acidic hydrolysis & UV oxidation, orthophosphates measurement by Molybdate - Ascorbic acid

Phosphate: colorimetric by Molybdate - Ascorbic acid

Ammonia: fluorimetric by OPA



µMAC SMART PORTABLE WATER ANALYZER



µMAC SMART is a portable analyzer fully controlled by an integrated PC with integrated colour Touch Screen, specifically designed for at site monitoring of all water resources

ROBUST AND RELIABLE

The analyzer is mounted in a robust and easy-to-transport plastic case including room for reagents and all other accessories. A reagent frame holds all reagent bottles and required solutions.

EASY TO INSTALL

Designed for easy operations, the analyzer can be used at site after a quick training. It is delivered from factory fully tested and ready to use; reagent kits are available for all standard measurements. Results are stored inside the analyzer memory and can be downloaded through USB port .

Analyzer start up and operations have never been easier! Just turn on and insert the reagents; a simple software will guide the operator through all necessary steps.



Reagent frame

AUTOMATED CALIBRATION

The analyzer calibration is fully automated; just use the calibration solution as specified in the manual and run calibration. The new calibration factor is checked and accepted if verified to be comprised within acceptance limits.

MULTIPLE PARAMETERS

The analyzer can be delivered ready for multiple measurements (MP versions) on the same sample; several set ups are available as standard.

MULTIPLE MEASUREMENTS

The analyzer offers the option for continuous operational mode; the operator can perform sequential measurements several times on the same sample or just leave the analyzer running while the sample flows.

OFF SCALE REANALYSIS

The analyzer identifies off scale samples and reanalyze the sample after automated dilution.



Reagent kits

µMAC SMART ECO VERSIONS

µMAC SMART ECO - COD UV: SAC direct reading at 254 nm, turbidity compensation at 550 nm as per DIN 348404-3, correlation with COD by known calibrant, this version can measure TOC as an alternative to COD

µMAC SMART ECO - BOD (Tryptophan Like): direct fluorimetric measurement (Tryptophan like), excitation at 280 nm and emission at 360 nm, correlation with BOD by a known Tryptophan calibrant, correlation factor to be confirmed / adjusted on site

µMAC SMART - ECO MP3 : COD (UV)/BOD/Turbidity, as per ISO 7027